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AMSAT NEWS SERVICE
ANS-278

The AMSAT News Service bulletins are a free, weekly news and information service of AMSAT North America, The Radio Amateur Satellite Corporation. ANS publishes news related to Amateur Radio in Space including reports on the activities of a worldwide group of Amateur Radio operators who share an active interest in designing, building, launching and communicating through analog and digital Amateur Radio satellites.

The news feed on http://www.amsat.org publishes news of Amateur Radio in Space as soon as our volunteers can post it.

Please send any amateur satellite news or reports to:
ans-editor at amsat.org.

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SB SAT @ AMSAT $ANS-278.01
ANS-278 AMSAT News Service Weekly Bulletins

AMSAT News Service Bulletin 278.01
 >From AMSAT HQ KENSINGTON, MD.
DATE October 5, 2014
To All RADIO AMATEURS
BID: $ANS-278.01

AMSAT Symposium Kickoff this Friday

The 2014 AMSAT Space Symposium in Baltimore Oct 10-12 is only a few days away. Don't miss this year's exciting programs, special events, Annual Meeting and 45th Anniversary celebration. On-line registration ends on Oct 7. But if you miss that, you can still attend through on-site registration.
Our full program of activities is at www.amsat.org
<http://www.amsat.org>

and you can register by clicking on the AMSAT Store button.

Space Symposium highlights include:

AMSAT Annual Meeting: Saturday Oct 11 3:45-5:15 pm ET, to be Simulcast on the Echolink "*AMSAT*" Channel

Keynote Speaker: Jan King, W3GEY, founding member of AMSAT and former member of the Board of Directors & V.P. of Engineering. "Never, Never, Never Give Up!"

Special "Living Legend" Presentation: Tuskegee Airman, Col. Charles E. McGee, "The Tuskegee Experiment" followed by questions from the audience.

Friday Night Reception and Space Auction: Auction items include unique models of AMSAT Phase-IIIA, NASA Scout Launch Vehicle, NASA Mars Polar Lander (that crashed on Mars) and other items such as a John Glenn commemorative from the Astronaut Hall of Fame, Signed Astronaut Photos, and unique parts from AMSAT spacecraft of the past.

Banquet Prize Drawing: Lot of outstanding prizes, including a Flexradio 1500, Peet Bros Ultimeter 2000 Weather Station, Digital Antenna Analyzer from Quicksilver, Inc, Bird Wattmeter with free element, ARRL Gift certificates, and many, many others.

Outstanding Paper Presentations on AMSAT Fox Satellite Development, ARISS, Educational Outreach, CubeSats, and Satellite Operations.

Sunday Informal Tours to the Baltimore Inner Harbor (including the Aquarium), the B&O Railroad Museum, Edgar Allen Poe House or the National Electronics Museum.

Sunday ARISS Operations Team Meeting-open to all, especially those with an interest in ARISS

Monday bus tour to the Udvar Hazy National Air and Space Museum

Your Space Symposium Committee hopes you don't miss this outstanding Symposium experience in "Charm City" Baltimore, Maryland!

[ANS thanks AMSAT-NA Symposium Committee for the above information]

AMSAT Annual Meeting Remote Participation via EchoLink

The 2014 AMSAT Symposium will be held Friday, Saturday, and Sunday, Oct 10-12 in Baltimore. The Annual Meeting will be held Saturday afternoon from 15:45 - 17:15 EDT (19:45z - 21:15z) and will be broadcast via EchoLink on the *AMSAT* channel. The Annual Meeting includes a report to the membership by the President and Senior Officers and includes a question and answer session where members may ask senior officers and BoD members questions. Echolink participants may send questions using the text messaging feature of EchoLink.

Some of Friday and Saturday's Symposium presentations may also be available via EchoLink, as these will be used to test the EchoLink hardware, software, and Internet connection. See http://www.amsat.org

for the Symposium schedule and the titles and times of the
presentations.

If you haven't used EchoLink before, you need to download the
software and validate your license *NOW*. EchoLink use is restricted
to licensed radio amateurs, because EchoLink is frequently used to
remotely key amateur radio transmitters and repeaters. The
validation process is used to prove that you are licensed. See
http://www.echolink.org
for more information. EchoLink software is available for free for
Windows, Linux, OSX, iPhone, iPad, and Android. An Internet
connection is required.

Once you've started EchoLink, search for the *AMSAT* channel (node
#101377), select it, and "Connect". The channel name includes
asterisks (*) both before and after AMSAT.

[ANS thanks Steve Belter, N9IP and the AMSAT-NA Symposium Committee
for the above information]

2014 AMSAT-NA General Meeting and Space Symposium Schedule,
Presentations, and Social Events Now at AMSAT.org

The Symposium Committee has released the final agenda consisting of
the schedule, list of presentations, and various social events and
tours at the 2014 AMSAT-NA General Meeting and Space Symposium.
Information may be found at www.amsat.org on the front page, with
more details under the Events tab. The full schedule in PDF format
can be downloaded from either link.

Main:
http://www.amsat.org/

Angenda:
http://www.amsat.org/?page_id=3295

Events, Trips, Tours:
http://www.amsat.org/?page_id=2880

[ANS thanks AMSAT-NA Symposium Committee for the above information]

2014 AMSAT-NA General Meeting and Space Symposium Online Registration
Closes October 7, 2014

On line registration for the 2014 AMSAT-NA General Meeting and
Symposium, and all associated activities will end at midnight EDT,
October 7, 2014.   (0400 UTC October 8th)   Symposium
registration will be $55 at the meeting. Please inquire for the
availability of other activities when you register.

[ANS thanks AMSAT-NA Symposium Committee for the above information]

4M Lunar Ham Radio Payload Shipped

Ghislain Ruy LX2RG reports the 4M Lunar flyby amateur radio payload was shipped on Thursday, October 2 and he departs for the Xichang Satellite Launch Center on Sunday, October 5.

He says the lifetime of 4M is quite an unknown: it may be as short as 100 hours (so at least to the Moon) and could extend for some weeks if the attitude is favorable.

It is now known that the spacecraft will not re-enter the Earth atmosphere after the flyby but instead enter a wonderful orbit. You will find information animations and some JT65B test files at

https://cloud.luxspace.lu/public.php?service=files&t=33c4a21c09ba3736a55fc09896e463f6

The launch will be transmitted by CNTV/CCTV:
http://www.cntv.cn/ or
http://english.cntv.cn/ or
http://english.cntv.cn/live/p2p/index.shtml

LX2RG says the team are setting up their ground station, and are especially looking for southern hemisphere stations: ZS, VK and ZL, Southern America continent mainly, as they will be placed first hand for the early hours.

Launched is planned in a narrow window at 17:59:xx UTC on October 23 and flyby is to occur nominally on October 28 at 00:33 UTC.
4M is planned to start transmissions at 19:17 UTC, possibly with 10 minutes additional delay.

K1JT has developed a special version of WSJT. In addition of all the features of the standard version, it includes also the display and logging of the dT to three decimal places and the logging of the manual offset that can be entered in JT65B modes. This version should be used by all who wants to participate to the ‘Multilateration’ experiment.
The participant to this experiment should also make sure that the clock of their PC stays synchronized to the UTC time. Desired accuracy should be within 1ms and within 10ms at the very least. Use of NTP synchronizing software is a must.

The special version can be downloaded with the following links:
http://physics.princeton.edu/pulsar/K1JT/WSJT_10.0r4336a.exe
https://cloud.luxspace.lu/public.php?service=files&t=2720825f74104b31ebd699dcc0fd6268

The LuxSpace ground station comprises 2 x 8 element crossed Yagis from Joachims antenna (with an improved design to lower the back lobe), a SSB.de LNA and Yaesu antenna rotators.

Best regards.
Ghislain Ruy LX2RG

Email ruy(a)luxspace.lu with “4M Amateur” in the subject

Read the paper 4M Mission: a Lunar FlyBy experiment

http://tinyurl.com/4M-Mission-V3

EME 2014 slides: 4M, A Moon Flyby Mission
http://tinyurl.com/4M-slides-eme2014

Manfred Memorial Moon Mission (4M)
http://moon.luxspace.lu/

4M-LXS Lunar amateur radio payload
http://amsat-uk.org/2014/09/01/4m-lunar-payload/

[ANS thanks AMSAT-UK for the above information]

NASA Scholarship and Internship Opportunities

OSSI NIFS -- Spring 2015 Opportunities
NASA's One Stop Shopping Initiative for Internships, Fellowships and Scholarships, or OSSI NIFS, strives to provide high school students and undergraduate and graduate students at all institutions of higher education access to a portfolio of internship, fellowship and scholarship opportunities offered by NASA mission directorates and centers.

Visit the Office of Education Infrastructure Division LaunchPad to find information on internship, fellowship and scholarship opportunities. The site features the OSSI NIFS online application for recruiting NASA interns, fellows and scholars. This innovative system allows students to search and apply for all types of higher education NASA internship, fellowship and scholarship opportunities in one location. A single application places the student in the applicant pool for consideration by all NASA mentors.

Applications for spring 2015 opportunities are due Oct. 12, 2014.

To find available opportunities and to fill out an online application, visit
https://intern.nasa.gov/index.html.

Inquiries about OSSI NIFS should be submitted via
https://intern.nasa.gov/oic/

[ANS thanks NASA Education Express Message -- Oct. 2, 2014 for the above information]

September/October 2014 AMSAT Journal is at the Print Shop

The September/October 2014 AMSAT Journal is complete and has been sent to our print shop. Look for it to arrive in your mailbox soon.

The Journal Team: JoAnne, K9JKM; Bernhard, VA6BMJ; Douglas, KA2UPW/2; and James, K3JPH extend our big thanks to all who contributed to this issue of the Journal.

Here is what you will find in this issue ...

+ Results of 2014 BOD Election

+ The Apogee View Column by Barry Baines, WD4ASW

+ AMSAT Fox-1 Challenge Coin

+ Using SatPC32 With HDSDR - Part 1: The DDE Interface
   by Steve Belter, N9IP

+ AMSAT Awards Update by Bruce Paige, KK5DO

+ AMSAT History - The Phase 2 Satellites by Bill Tynan, W3XO

+ RTL-SDR + SDR Radio + FUNcube = Fun! by Jason T. Charles, N4JTC

+ South Texas Balloon Launch Team BLT-41 Flight
   by Andy MacAllister, W5ACM

+ Minimalist Preamp Revisited by Mark Spencer, WA8SME

+ From AMSAT's History Archive - November 15 is AO-7 + 40 Years

+ Eyewitness Report - AMSAT at the ARRL Centennial Convention
   by E. Mike McCardel, KC8YLD

The AMSAT Journal is a membership benefit of AMSAT-NA. Not yet a member? All of the details of how to join are at http://www.amsat.org

[ANS thanks the AMSAT Journal Team for the above information]

First FUNcube 73 on 73 Award Issued

Paul Stoetzer N8HM reports the first AO-73 (FUNcube-1) 73 on 73 Award has been issued to Wyatt Dirks AC0RA.

The award aims to promote activity on AO-73 satellite. The requirements are straight-forward:

1. Work 73 unique stations on AO-73.
2. Contacts must be made on or after September 1, 2014.
3. There are no geographic restrictions on your operating location.

Congratulations to Wyatt Dirks, AC0RA, for claiming 73 on 73 Award #1. He has submitted a list with a total of 74 unique calls worked on AO-73 since September 1.

It’s been great to hear all the activity on the satellite over the last few weeks. I look forward to hearing and working many more stations, especially after the end of Daylight Saving Time makes the evening passes a bit earlier!

73, Paul Stoetzer, N8HM

Full details of the award at

http://amsat-uk.org/2014/08/18/73-on-73-award-announcement/

[ANS thanks AMSAT-BB & AMSAT-UK for the above information]

AMSAT Events

Information about AMSAT activities at other important events around the country. Examples of these events are radio club meetings where AMSAT Area Coordinators give presentations, demonstrations of working amateur satellites, and hamfests with an AMSAT presence (a table with AMSAT literature and merchandise, sometimes also with presentations, forums, and/or demonstrations).

* Wednesday, 8 October 2014 – presentation at HacDC Amateur Radio Club (W3HAC) meeting in Washington DC (3rd floor of St. Stephen and the Incarnation Episcopal Church – north of the White House)
* Sunday, 25 October 2014 – Hamfest Chattanooga 2014 in Chattanooga TN (Alhambra Center, near TN-320 and I-75 exit 3)
* Saturday, 8 November 2014 – Tucson Hamfest 2014 in Marana AZ (along I-10 west frontage road, east of exit 236)
* Saturday, 6 December 2014 – Superstition Superfest 2014 in Mesa AZ (Mesa Community College, Dobson Road between Southern Avenue & US-60 exit 177)
* Saturday, 10 January 2015 – Thunderbird Hamfest in Phoenix AZ (43rd Avenue, between Greenway and Bell Roads)
* Friday and Saturday, 20-21 February 2015 – Yuma Hamfest in Yuma AZ (Yuma County Fairgrounds, 32nd Street between Pacific Avenue & Avenue 3E, south of I-8 exit 3)

[ANS thanks AMSAT-NA for the above information]

ARISS News

Upcoming Contacts

* Winter Gardens Primary School, Canvey Island, United Kingdom and Pilton Bluecoat School, Barnstaple, United Kingdom, telebridge via W6SRJ.
Contact is a go for: Wed 2014-10-08 10:08:49 UTC 40 deg

Winter Gardens School

Winter Gardens Primary School is a larger than average school on Canvey Island in Essex, England. It has two forms of entry catering for 60 children in each year group. Our school is full to capacity with 420 children from Foundation Stage (Reception – Age 4) up to Year 6 (Age 11).
On the school site we also have the Winter Gardens Pre-School which caters for 60 children a day and the Winter Gardens Toddler Group which caters for children from birth upwards.
Canvey Island is situated on the Thames estuary and is an actual Island. Close towns include Basildon and Benfleet and slightly

further afield, Grays (Thurrock) and Southend. There are 12 schools on the Island, two of which are secondary schools.
Winter Gardens Primary School is an active school not only within the local community, but also nationally and internationally. Children have taken part in many events in London and we regularly receive visitors from a school in Germany.

Pilton Bluecoat School
Pilton Bluecoat is a state run Junior School catering for 250 children aged between 7 – 11 years that is situated on the North Devon coast in the South West of England. The school has excellent links with its community and is committed to providing a vibrant and active learning environment for students. The school prides itself in the high levels of academic attainment by the children as well as providing the children with a wide range of opportunities to enhance their personal development.
Our school has been taking part in a whole school theme entitled 'The Final Frontier.'
We have been looking at aspects of space and will include factual investigations, setting up fictitious scenario and looking at aspects of space travel and space history.
All curriculum subjects will be integrated into the work, including mathematics and literacy. The children will be given the opportunity to explore their own ideas and facilitate their own learning pathways. Children will also have the opportunity to develop their creativity through aspects of art, music and science.

* A direct contact with students participating in Team Sky and Rocket (NPO Sora-TO-Rocket-Dan) in Kariya, Aichi, Japan is scheduled for Thu 2014-10-09. The contact will be via 8J2YSM at 09:00:05 UTC, 57 deg.

Team Sky and Rocket was founded in 2010. Activities include the production of a model rocket and launch by students. A lecture by a professor of Aerospace Engineering was part of the preparation for the space station contact. The program also held The Cosmic College" in collaboration with JAXA in 2012.

Latest News

* A telebridge contact with students at Gulf English School, Kuwait City, Kuwait and Language High School "Geo Milev", Dobrich, Bulgaria scheduled for Thu 2014-09-25 will be rescheduled.

* From 2014-11-10 to 2014-12-07, there will be no US Operational Segment (USOS) hams on board ISS. So any schools contacts during this period will be conducted by the ARISS Russia team.

[ANS thanks ARISS, Keith, W5IU and Charlie, AJ9N for the above information]

Satellite Shorts From All Over

*Space Debris Expert Warns of Increasing CubeSat Collision Risk

The increasing number of small 'CubeSat' satellites being launched combined with a relaxed attitude to debris mitigation could lead to hazards for all space users unless preventative measures are taken,

warns a leading space debris expert from the University of Southampton.

Speaking at the 65th International Astronautical Congress in Toronto, Dr Hugh Lewis said that this combination leads to a growth in space debris, as a result of collisions between CubeSats and other objects in orbit.

CubeSats are small satellites (around 10x10x10cm) that are providing opportunities for companies to break into the space data and communications industries. Despite many CubeSats not having any manoeuvring capability so they cannot avoid collisions during the mission or manoeuvre to a disposal orbit at their mission end, they are still perceived to have a low impact on the space debris environment.

However, despite guidelines requiring the satellites to deorbit within 25 years, some are being launched into high Earth orbits, which means their orbital lifetime could be much greater.

More than a third of all CubeSats launched to-date (around 160 between 2003 and 2013) are predicted to remain on-orbit for more than 25 years. Since 2005, CubeSats have been involved in more than 360,000 close approaches of less than 5 km with other orbiting objects.

Dr Lewis says: "To reduce the risks, some effort is needed to engage with the growing small satellite community. All space users, not just those in the CubeSat community, who are taking the right steps should be encouraged to continue and, ultimately, lead on sustainable practices and debris mitigation activities.

"Those who are not yet engaged with this approach should be encouraged to do so. It's probably a matter of changing their perceptions of the risks and helping them to understand that there is a collective responsibility to ensure that outer space activities are sustainable so that future generations have the same opportunities to use space as we do."

Dr Lewis and his team used their Debris Analysis and Monitoring Architecture to the Geosynchronous Environment (DAMAGE) model to simulate three future CubeSat launch traffic scenarios until the year 2043. By comparing these with close approach data from 2005 to 2013, the team found CubeSats are estimated to be involved in millions of close approaches over the next 30 years, with a handful leading to a collision.

Analysis of the close approaches found that most of the collision risk from CubeSats comes from high-speed encounters with large spacecraft. In addition, many of these encounters were in Sun-synchronous orbits that are popular with remote sensing and Earth science satellites.

Dr Lewis adds: "By far the greatest risk comes from those with long lifetimes at altitudes of about 750 km. If CubeSats continue to be launched into long-lived orbits without any means of disposing of them, then they will contribute to the growing space debris hazard. This is not a responsible or sustainable practice, in my view. However, if efforts are made to limit the lifetimes- as some are already doing - then the risks will be reduced."

http://www.spacemart.com/reports/Space_debris_expert_warns_of_increasing_CubeSat_collision_risk_999.html

[ANS thanks spacemart.com for the above information]

*ISS Expedition 42 Poster Released

Radio amateur and astronaut Samantha Cristoforetti IZ0UDF has put the final touches to the official crew poster for the International Space Station (ISS) Expedition 42. It is now available to download.

The poster parodies the popular The Hitchhiker’s Guide to the Galaxy by Douglas Adams and is without doubt the best ISS crew poster yet released.

USA’s Terry Virts and Russia’s Anton Shkaplerov portray the two-headed Zaphod Beeblebrox, Russia’s Alexander Samokutyaev is Humma Kavula, USA’s Butch Wilmore is Arthur Dent, Russia’s Elena Serova is Ford Prefect with Italy’s Samantha Cristoforetti as Trillian. NASA’s Robonaut 2 guest-stars as Marvin the Paranoid Android.

Samantha should launch from Baikonur in Kazakhstan on November 23, 2014 at 2059 UT (3:59pm EST) also flying with her in the Soyuz will be Anton Shkaplerov and Terry Virts. She is expected to return to Earth in May 2015.

Download the high resolution (57 MB) poster from
http://www.nasa.gov/sites/default/files/exp_42_sfapostern w-2014-07-007_highres.pdf

Samantha Cristoforetti IZ0UDF on Twitter
https://twitter.com/AstroSamantha

ISS Expedition 42
http://www.nasa.gov/mission_pages/station/expeditions/expedition42/

[ANS thanks AMSAT-UK for the above information]

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In addition to regular membership, AMSAT offers membership in the President's Club. Members of the President's Club, as sustaining donors to AMSAT Project Funds, will be eligible to receive additional benefits. Application forms are available from the AMSAT Office.

Primary and secondary school students are eligible for membership at one-half the standard yearly rate. Post-secondary school students enrolled in at least half time status shall be eligible for the student rate for a maximum of 6 post-secondary years in this status. Contact Martha at the AMSAT Office for additional student membership information.

73,
This week's ANS Editor,
Joe Spier, K6WAO
k6wao at amsat dot org